



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

July 18, 2018

Carrie M. Tackema
Regulatory Manager
Nufarm Americas, Inc.
11901 S. Austin Avenue
Alsip, IL 60803

Subject: Label Amendment – Revise Water Soluble Packaging Directions for Use as per
EPA letter dated April 5, 2017
Product Name: Mantra 60 WSP
EPA Registration Number: 228-681
Application Date: 09/18/2017
Decision Number: 542596

Dear Ms. Tackema:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. The next label printing of this product must use this labeling unless subsequent changes have been approved. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

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Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Paul Di Salvo by phone at 703-347-0322, or via email at disalvo.paul@epa.gov.

Sincerely,

A handwritten signature in black ink that reads "Paul Di Salvo" followed by a small "for" in a cursive script.

Venus Eagle, Product Manager 07
Invertebrate and Vertebrate Branch 3
Registration Division (7505P)
Office of Pesticide Programs

Enclosure

GROUP

4A

INSECTICIDE

Mantra[®] 60 WSP

Greenhouse and Nursery Insecticide

FOR SYSTEMIC INSECT CONTROL ON ORNAMENTAL PLANTS IN GREENHOUSES, NURSERIES AND INTERIOR PLANTSCAPES.

ACTIVE INGREDIENT:

Imidacloprid: 1-[(6-Chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine 60.0%

OTHER INGREDIENTS:..... 40.0%

TOTAL:..... 100.0%

This product contains 12 grams (0.0265 lbs) of imidacloprid per packet.

Keep water-soluble packets in this container and store in a cool dry place but not below freezing (32°F).

DO NOT remove packets from container except for immediate use.

KEEP OUT OF REACH OF CHILDREN

CAUTION

SEE INSIDE BOOKLET FOR FIRST AID AND ADDITIONAL PRECAUTIONARY STATEMENTS

For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300

For Medical Emergencies Only, Call (877) 325-1840

EPA REG. NO. 228-681

EPA EST. NO. _____

MANUFACTURED BY
NUFARM AMERICAS INC.
11901 SOUTH AUSTIN AVENUE
ALSIP, IL 60803



[Nufarm: Grow a better tomorrow]

[Grow a better tomorrow]

NET WEIGHT _____ X 20 grams (_____ X 0.705 oz)

000228-00681.20180711.draft

ACCEPTED

07/18/2018

Under the Federal Insecticide, Fungicide
and Rodenticide Act as amended, for the
pesticide registered under
EPA Reg. No. 228-681

228-681

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION

Harmful if swallowed, inhaled, or absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing dust or vapor.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

ENGINEERING CONTROL STATEMENT: Water soluble packets, when used correctly, qualify as a closed mixing/loading system under the Worker Protection Standard [40 CFR 170.607(d)]. Mixers and loaders handling this product while it is enclosed in intact water soluble packets may elect to wear reduced PPE of long-sleeved shirt, long pants, shoes, socks, and chemical-resistant gloves. When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment break-down.

USER SAFETY RECOMMENDATIONS

Users Should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

FIRST AID

IF SWALLOWED	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • DO NOT induce vomiting unless told to do so by the poison control center or doctor. • DO NOT give anything by mouth to an unconscious person.
IF INHALED	<ul style="list-style-type: none"> • Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. • Call a poison control center or doctor for further treatment advice.
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.

HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-877-325-1840 for emergency medical treatment information.

NOTE TO PHYSICIAN

No specific antidote is available. Treat the patient symptomatically.

ENVIRONMENTAL HAZARDS

This product is highly toxic to aquatic invertebrates. **DO NOT** apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark.

DO NOT contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on the foliage of blooming crops/plants or weeds. **DO NOT** apply this product or allow it to drift to blooming crops/plants or weeds if bees are foraging the treatment area.

This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

PROTECTION OF POLLINATORS



APPLICATION RESTRICTIONS EXIST FOR THIS PRODUCT BECAUSE OF RISK TO BEES AND OTHER INSECT POLLINATORS. FOLLOW APPLICATION RESTRICTIONS FOUND IN THE DIRECTIONS FOR USE TO PROTECT POLLINATORS.



Look for the bee hazard icon in the Directions for Use for each application site for specific use restrictions and instructions to protect bees and other insect pollinators.

This product can kill bees and other insect pollinators.

Bees and other insect pollinators will forage on plants when they flower, shed pollen, or produce nectar.

Bees and other insect pollinators can be exposed to this pesticide from:

- Direct contact during foliar applications, or contact with residues on plant surfaces after foliar applications
- Ingestion of residues in nectar and pollen when the pesticide is applied as a seed treatment, soil, tree injection, as well as foliar applications.

When Using This Product Take Steps To:

- Minimize exposure of this product to bees and other insect pollinators when they are foraging on pollinator attractive plants around the application site.
- Minimize drift of this product on to beehives or to off-site pollinator attractive habitat. Drift of this product onto beehives or off-site to pollinator attractive habitat can result in bee kills.

Information on protecting bees and other insect pollinators may be found at the Pesticide Environmental Stewardship website at:

<http://pesticidestewardship.org/PollinatorProtection/Pages/default.aspx>.

Pesticide incidents (for example, bee kills) should immediately be reported to the state/tribal lead agency. For contact information for your state, go to: www.aapco.org/officials.html. Pesticide incidents should also be reported to the National Pesticide Information Center at: www.npic.orst.edu or directly to EPA at:

beekill@epa.gov

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

See individual sites for specific pollinator protection application restrictions. If none exist under the specific site, for foliar applications, follow these application directions for food/feed crops and commercially grown ornamentals that are attractive to pollinators:

1. FOR CROPS UNDER CONTRACTED POLLINATION SERVICES



Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless the following condition has been met.

If an application must be made when managed bees are at the treatment site, the beekeeper providing the pollination services must be notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

2. FOR FOOD CROPS AND COMMERCIALY GROWN ORNAMENTALS NOT UNDER CONTRACT FOR POLLINATION SERVICES BUT ARE ATTRACTIVE TO POLLINATORS



Do not apply this product while bees are foraging. Do not apply this product until flowering is complete and all petals have fallen unless one of the following conditions is met:

- The application is made to the target site after sunset
- The application is made to the target site when temperatures are below 55°F
- The application is made in accordance with a government-initiated public health response
- The application is made in accordance with an active state-administered apiary registry program where beekeepers are notified no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying
- The application is made due to an imminent threat of significant crop loss, and a documented determination consistent with an IPM plan or predetermined economic threshold is met. Every effort should be made to notify beekeepers no less than 48-hours prior to the time of the planned application so that the bees can be removed, covered or otherwise protected prior to spraying.

DO NOT apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Note to Reviewer: the two statements in brackets below may be used as they relate to *Tilia* species:

[**DO NOT** apply this product, by any application method, to linden, basswood or other *Tilia* species in the State of Oregon.]

[**DO NOT** apply this product, by any application method, to linden, basswood or other *Tilia* species.]

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

DO NOT enter or allow worker entry into treated areas during the **restricted-entry interval (REI) of 12 hours**. Exception: If this product is applied by drenching, the Worker Protection Standard, under certain circumstances allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls

- Chemical-resistant gloves made of waterproof material such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinylchloride (PVC) or viton
- Shoes plus socks
- Protective eyewear

USE INFORMATION

This product is for insect control in grassy areas in nurseries and on ornamental and vegetable plants (intended for resale only) in nurseries, greenhouses and interior plantscapes. This product is a systemic product and will be translocated upward within the plant. Apply this product to plant foliage when directed or to the soil where the roots of the plant can absorb the active ingredient. Irrigate modestly but thoroughly after soil applications, allowing no runoff from treated area and no leaching and runoff from containers for at least three irrigations or 10 days whichever is longer.

Resistance: Some insects are known to develop resistance to Insecticides after repeated use. As with any insecticide, the use of this product should conform to resistance management strategies established for the use area. Consult your Cooperative Extension Service for resistance management strategies and recommended pest management practices for your area.

Incorporation: Incorporation of this product can be achieved by one of the following methods; cultivation, irrigation, rainfall, mechanical placement, soil injection, drenching and broadcast sprays.

Woody Perennials: Onset of protection is slower than in herbaceous species. A delay of 2 or more weeks should be expected. Longer delays may be expected with larger plants. Application should therefore be made in advance of expected insect activity.

Bark Media: Media with 30% or more bark content when treated with this product may confer a shorter period of protection.

APPLICATION THROUGH IRRIGATION SYSTEMS (CHEMIGATION)

Apply this product at rates specified on this label either alone or in tank mixture with other pesticides and chemicals registered for application through irrigation systems. The normal dilution ratio is 1:10 to 1:200, depending on the system. Always meter the product into the irrigation water during the first part of the irrigation cycle. Mix the product separately prior to injection. Agitate as necessary if the mixture is allowed to stand more than 24 hours.

- **DO NOT** connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- Apply this product only through micro-irrigation (individual spaghetti tube), drip irrigation, overhead irrigation, and ebb and flood or hand-held or motorized calibrated irrigation equipment. **DO NOT apply this product through any other type of irrigation system.** Crop injury or lack of effectiveness can result from non-uniform distribution of treated water.
- Be sure to remove scale, pesticide residue and other foreign matter from the tank and entire irrigation system prior to application.
- A person knowledgeable of the chemigation system and responsible for its operation, or a person who is under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
- If you have any questions about calibration, contact State Extension Service specialists, equipment manufacturers or other experts.

SAFETY DEVICES FOR IRRIGATION SYSTEMS CONNECTED TO PUBLIC WATER SUPPLIES:

If the source of water for your irrigation system is a public water supply, follow the instructions below.

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.

SAFETY DEVICES FOR IRRIGATION SYSTEMS NOT CONNECTED TO A PUBLIC WATER SUPPLY:

1. The system must contain a functional check valve, vacuum relief valve and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the pesticide distribution is adversely affected.
6. Systems must use a metering pump such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment.

MIXING INSTRUCTIONS

Within each foil pouch is a clear, water-soluble inner packet containing this product. To prepare the mixture, remove the outer foil pouch and drop the required number of unopened clear water soluble packets, as determined under "Drench and Irrigation Applications", into the spray tank while filling with water to the desired level. Operate the agitator while mixing. Depending on the amount of agitation and the water temperature, the packets should be completely dissolved within a few minutes of being added to the water, with cooler water temperatures increasing the time needed for the inner packet to dissolve completely.

Instructions for Using Water Soluble Packages Directly into Spray Tanks:

Water Soluble Packages (WSPs) are designed to dissolve water. Agitation may be used, if necessary, to help dissolve the WSP. Failure to follow handling and mixing instructions can increase your exposure to the pesticide products in WSPs. WSPs, when used properly, qualify as a closed mixing/loading system under the Agricultural Worker Protection Standard [40 CFR 170.607(d)].

Handling Instructions

Follow these steps when handling pesticide products in WSPs.

1. Mix in spray tank only.
2. Handle WSP(s) in a manner that protects package from breakage and/or unintended release of contents. If package is broken, put on PPE required for clean-up and then continue with mixing instructions.
3. Keep the WSP(s) in outer packaging until just before use.
4. Keep the WSP dry prior to adding to the spray tank.
5. Handle with dry gloves and according to the label instructions for PPE.
6. Keep WSP intact. Do not cut or puncture WSP.
7. Reseal the WSP outer packaging to protect any unused WSP(s).

Mixing Instructions

Follow the steps below when mixing this product, including if tank mixed with other pesticide products. If being tank mixed, the mixing directions 1 through 9 below take precedence over the mixing directions of the other tank mix products. WSPs may, in some cases, be mixed with other pesticide products so long as the directions for use of all mixed products do not conflict. Do not tank mix this product with products that prohibit tank mixing or have conflicting mixing directions.

1. If a basket or strainer is present in the tank hatch, remove prior to adding the WSP to the tank.
2. Fill tank with water to approximately one-third to one-half of the desired final volume of spray.
3. Stop adding water and stop any agitation.
4. Place intact/unopened WSP(s) into the tank.
5. Do not spray water from a hose or fill pipe to break or dissolve the WSP(s).
6. Start mechanical and recirculation agitation from the bottom of tank without using any overhead circulation, if possible. If overhead recirculation cannot be turned off, close the hatch before starting agitation.
7. Dissolving the WSP(s) may take up to 5 minutes or longer, depending on water temperature, water hardness and intensity of agitation.
8. Stop agitation before tank lid is opened.
9. Open the lid to the tank, exercising caution to avoid contact with dusts or spray mix, to verify that the WSPs have fully dissolved and the contents have been thoroughly mixed into the solution.
10. Do not add other allowed products or complete filling the tank until the bags have fully dissolved and pesticide is thoroughly mixed.
11. Once the WSP have fully dissolved and any other products have been added to the tank, resume filling the tank with water to the desired level, close the tank lid, and resume agitation.
12. Use the spray solution when mixing is complete.
13. Maintain agitation of the diluted pesticide mix during transportation and application.
14. It is unlawful to use any registered pesticide, including WSPs, in a manner inconsistent with its label.

Mixing Precautions:

- **DO NOT** allow packets to become wet prior to adding to the tank.
- **DO NOT** handle the clean inner packets with wet hands or wet gloves.
- Rough handling of the packets may cause breakage.
- Reseal outer carton to protect remaining packets.

Tank Mixes: This product has been found to be compatible with commonly used liquid fertilizers, fungicides and insecticides. If this product is not known to be compatible with your particular tank mix partners, check compatibility using the correct proportion of products in a small jar test.

USE RESTRICTIONS (All Uses)

- **DO NOT** make a foliar application of any chloronicotinyl insecticide for resistance management purposes following a soil application of this product on the same crop.
- **DO NOT** use product packets in a tank mix with products that contain boron or release free chlorine; the PVA packet reacts with boron or free chlorine to produce a plastic that is not soluble in water. NOTE: Normal chlorinated water is acceptable for mixing.
- **DO NOT** use this product on commercial sod farms.
- **DO NOT** allow livestock to graze in treated areas or use clippings from treated areas for feed or forage unless specified otherwise on this label.
- **DO NOT** apply this product to soils that are waterlogged or saturated.
- **DO NOT** allow runoff or puddling of irrigation water following application.
- **DO NOT** allow leachate to run off for the first 10 days after application or reduced efficacy may result.
- **DO NOT** exceed the total 10.7 oz (15 packets) of this product (0.4 lbs AI) / Acre per year specified for the uses indicated on this label.
- **DO NOT** remove individual packets from container except for immediate use.

APPLICATION TO GRASSY AREAS IN NURSERIES AND NURSERY GROWN ORNAMENTALS

Use this product on grassy areas in nurseries, around and on nursery grown ornamentals, and in planting rows in nurseries to control listed pests. Make application prior to anticipated pest infestation to maximize control. Rainfall, irrigation and mechanical incorporation after application will aid in maximizing control.

The active ingredient in this product has sufficient residual activity so that applications can be made preceding the egg laying activity of the target pests. High levels of control can be achieved when applications are made preceding or during the egg laying period. The need for an application can be based on historical monitoring of the site, previous records or experiences, current season adult trapping or other methods.

GRASSY AREAS (in Field & Forest Nurseries)	
PEST	DOSAGE
For control of: Annual bluegrass weevil Asiatic garden beetles (<i>Maladera</i> spp.) Billbugs Black turfgrass ataenius European chafer European Crane Fly Green June beetle Japanese beetle May or June beetles Northern masked chafer Oriental beetle (<i>Phyllophaga</i> spp.) Southern masked chafer	1 Packet (20 grams) per 2900 – 3850 ft ² or 11 – 15 packets / Acre
For control of: Mole crickets	1 Packet (20 grams) per 2900 ft ² or 15 packets / Acre
For suppression of: Chinchbugs Cutworms	
Application Instructions	
<p>Apply this product in sufficient water to provide adequate distribution in the treated area. The use of accurately calibrated equipment normally used for soil application of insecticides is required. Use equipment that will produce a uniform, coarse droplet spray, using a low pressure setting to eliminate off-target drift. Check calibration periodically to ensure that equipment is working properly.</p>	
Remarks	
<p>For control of grubs, billbugs, European crane fly and annual bluegrass weevil, make application prior to egg hatch of the target pest..</p> <p>For control of mole crickets make application prior to or during the peak egg hatch period. When adults or large nymphs are present and actively tunneling, accompany this product with a remedial insecticide.</p> <p>For suppression of chinchbugs, make application prior to the hatching of the first instar nymphs.</p> <p>Consult your local State Agricultural Experiment Station, or State Extension Turf Specialists for more specific information regarding timing of application.</p> <p>Mowing of the vegetation in the area to be treated to a height of 3 inches or less prior to application will improve the consistency of control.</p> <p>Irrigation or rainfall is needed within 24 hours after application to move the active ingredient through the thatch.</p>	
Restrictions	
<p>DO NOT apply more than 10.7 oz (15 packets) (0.4 lb of active ingredient) per acre per year.</p> <p>DO NOT mow grassy area until after irrigation or rainfall has occurred so that uniformity of application will not be affected.</p> <p>DO NOT allow runoff or puddling of irrigation water following application.</p> <p>DO NOT apply this product to water-logged or saturated areas. Application of this product to water-logged or saturated areas will not allow penetration into the root zone of the plant.</p> <p>DO NOT allow this product to contact plants in bloom if bees are foraging the treatment area.</p> <p>DO NOT graze treated areas or use clippings from treated areas for feed or forage.</p>	

ORNAMENTAL TREES (including non-bearing fruit & nut trees), SHRUBS, EVERGREENS, FLOWERS, FOLIAGE PLANTS, GROWDCOVERS, INTERIOR PLANTSCAPES, VEGETABLE PLANTS* (on and around field-grown nursery and container stock, indoor and outdoor ornamentals (including both greenhouse and interior plantscapes) and on ornamentals grown in flats, benches or beds)

Foliar Applications

PEST	DOSAGE
For control of: Adelgids Aphids Japanese beetle (adult) Lacebugs Leaf beetles (including elm and viburnum leaf beetles) Leafhoppers (including glassy-winged sharpshooter) Leafminers Mealybugs Sawfly larvae Whiteflies	1 packet per 100 gallons of water
For suppression of: Thrips	

Foliar Application Instructions

Apply this product in a sufficient volume of water to uniformly cover the treatment area. Foliar applications will provide systemic activity against target pests.

If plants (such as holly, pine or ivy) have foliage that is difficult to wet, Nufarm recommends this product be applied with a spreader/sticker.

Time applications to occur before heavy pest populations arise; make repeat applications as necessary.

Soil (Broadcast) Applications

PEST	DOSAGE
For control of: White grub larvae (including Japanese beetle, Masked Chafer, European Chafer, Oriental beetle, Asiatic Garden beetle)	1 Packet (20 grams) per 2900 – 3850 ft ² or 11 – 15 packets / Acre

Soil (Broadcast) Application Methods

Mix the required amount of this product in sufficient water to uniformly and accurately cover the area being treated.

DO NOT use less than 2 gallons of water per 1000 sq. ft. of treatment area.

Irrigate thoroughly to incorporate the product into the upper soil profile. Incorporate application into the soil before planting or apply after plants are established. For applications made to established plants, irrigate thoroughly after application.

Remarks

Mowing of the vegetation in the area to be treated to a height of 3 inches or less prior to application will improve the consistency of control.

Restrictions

DO NOT apply more than 10.7 oz (300 grams) (15 packets) (0.4 lb of active ingredient) per acre per year.

DO NOT allow runoff or puddling of irrigation water following application.

DO NOT apply this product to water-logged or saturated areas. Application of this product to water-logged or saturated areas will not allow penetration into the root zone of the plant.

DO NOT exceed an application frequency of more than once each 16 weeks on nursery ornamentals with a production cycle of less than one (1) year.

DO NOT exceed one (1) application per year on nursery ornamentals with a production cycle of greater than one year.

*Only for use on vegetable plants intended for resale including: Broccoli, Chinese broccoli, Broccoli raab, Brussels sprouts, Cabbage, Chinese Cabbage, Cauliflower, Collards, Eggplant, Ground cherry, Kale, Kohlrabi, Lettuce, Mustard greens, Pepinos, Peppers, Potatoes, Rape greens, Sorghum, Sugarbeets, Tomatillo, and Tomato.

DO NOT make a foliar application of this product following a soil application in the same crop for resistance management purposes.

Rotational Crops:

Food Crops: Treated areas may be replanted with any crop specified on an imidacloprid label, or with any crop for which a tolerance exists for the active ingredient.

For crops not listed on any imidacloprid label, or for crops for which no tolerances for the active ingredient have been established, a 12 month plant-back interval must be observed.

SOIL INJECTION & BASAL DRENCH APPLICATIONS: NURSERY, GREENHOUSE AND INTERIORESCAPE PLANTS

For control of: Adelgids, Alder borer, Aphids, Black vine weevil larvae, Bronze birch borer, Emerald ash borer, Eucalyptus longhorned borer, Flatheaded borers (including Bronze birch and Alder), Japanese beetles, Lace bugs, Leaf beetles (including elm and viburnum leaf beetles), Leafhoppers (including glassy-winged sharpshooter), Leafminers, Mealybugs, Pine tip moth larvae, Psyllids, Royal palm bugs, Sawfly larvae*, Soft scales, White grub larvae, Whiteflies

For suppression of: Armored scales, Thrips

USE RATE	APPLICATION SITE
TREES	
<p>Diameter at Breast Height (DBH) is measured at 4.5 feet from the ground.</p> <p>Use the following rates as a function of tree diameter at breast height (DBH):</p> <p>Apply 1 packet (20 grams) per 8 - 16 inches of trunk diameter (DBH).</p> <p>You may only use the higher rate on trees >15 inches (DBH) to control:</p> <p>Asian longhorned beetle, Emerald ash borer, Eucalyptus longhorned borer, Bronze birch borer, and Alder borer.</p> <p>To calculate the higher rates, divide trunk diameter by 8 inches. Refer to example calculations below.</p> <p>RESTRICTION: DO NOT apply more than 15 packets (300 grams) (0.4 lb AI) per acre per year.</p>	<p>Soil Injection: GRID SYSTEM: Holes must be spaced on 2.5 foot centers, in a grid pattern, extending to the drip line of the tree. CIRCLE SYSTEM: Apply in holes evenly spaced in circles, (use more than one circle dependent upon the size of the tree) beneath the drip line of the tree extending in from that line. BASAL SYSTEM: Space injection holes evenly around the base of the tree trunk no more than 6 to 12 inches out from the base.</p> <p>Mix required dosage in sufficient water to inject an equal amount of solution in each hole. Maintain a low pressure and use sufficient solution for distribution of the liquid into the treatment zone. Keep the treated area moist for 7 to 10 days.</p> <p>DO NOT use less than 4 holes per tree.</p> <p>NEW YORK SPECIFIC RESTRICTION: No Soil Injection Applications Allowed in Nassau or Suffolk Counties of New York.</p> <p>Soil Drench: Uniformly apply the dosage in no less than 10 gallons of water per 1,000 square feet as a drench around the base of the tree, directed to the root zone. Remove plastic or any other barrier that will stop solution from reaching the root zone.</p> <p>For Control of Specified Borers: Application to trees already heavily infested may not prevent the eventual loss of the trees due to existing pest damage and tree stress.</p>

EXAMPLE CALCULATIONS:

Example 1 (To calculate the standard rate): If you have three trees having DBH of 8, 10 & 16 inches, the total cumulative inches of trunk diameter is 34 inches (8 + 10 + 16 = 34)

$$34/16 = 2.125 \times 20 \text{ grams (1 packet)} = 42.5 \text{ grams}$$

If you have a single tree with a DBH of 12 inches, the lower rate range will be:

$$12/16 = 0.75 \times 20 \text{ grams (1 packet)} = 15 \text{ grams}$$

Example 2 (To calculate the higher rate): If you have three trees having DBH of 15, 20 & 25 inches, the total cumulative inches of trunk diameter is 60 inches (15 + 20 + 25 = 60)

$$60/8 = 7.5 \times 20 \text{ grams (1 packet)} = 150 \text{ grams}$$

If you have a single tree with a DBH of 16 inches, the lower rate range will be:

$$16/8 = 2 \times 20 \text{ grams (1 packet)} = 40 \text{ grams}$$

SHRUBS

<p>Use 1 packet (20 grams) per 8 - 16 feet cumulative shrub height</p>	<p>Soil Injection: Apply to individual plants using dosage indicated.</p> <p>Mix required dosage in sufficient water to inject an equal amount of solution in each hole. Maintain a low pressure and use sufficient solution for distribution of the liquid into the treatment zone. Keep the treated area moist for 7 to 10 days.</p> <p>DO NOT use less than 4 holes per shrub.</p>
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	NEW YORK SPECIFIC RESTRICTION: No Soil Injection Applications Allowed in Nassau or Suffolk Counties of New York.
	Soil Drench: Uniformly apply the dosage in no less than 10 gallons of water per 1,000 square feet as a drench around the base of the tree, directed to the root zone. Remove plastic or any other barrier that will stop solution from reaching the root zone.
FLOWERS & GROUNDCOVERS	
1 Packet (20 grams) per 3000 ft ² or 15 packets (300 grams) / Acre	Apply as a broadcast treatment and incorporate into the soil before planting or apply prior to bloom or after all flower petals have fallen off for established plants. If application is made to established plants, irrigate thoroughly after application.
Remarks	
*Sawfly larvae feed on mature foliage beginning in early spring. Make treatments in the fall before sawfly emergence in spring to allow adequate time for imidacloprid translocation into mature foliage.	
Restrictions	
DO NOT apply more than 15 packets (300 grams) (0.4 lbs AI) per acre per year.	
DO NOT harvest or consume fruits or nuts from trees that have been treated within 1 year of application.	

IRRIGATION AND DRENCH APPLICATIONS

Apply this product to ornamental and vegetable plants in greenhouses, nurseries and interior landscapes using soil drenches, micro-irrigation, drip irrigation, overhead irrigation, ebb and flood irrigation, or hand-held or motorized calibrated irrigation equipment.

RESTRICTIONS:

- For outdoor ornamentals grown in beds or turf, **DO NOT** exceed a total of 10.7 oz (300 grams) (15 packets) (0.4lb of active ingredient) per application per acre per year.
- On plants with a production cycle of less than one year, **DO NOT** exceed a frequency of more than once each 16 weeks for a particular plant. On stock plants and woody crops with a production cycle of greater than one year, **DO NOT** exceed application once a year.

Food Crops:

Replant treated areas with any crop specified on an imidacloprid label, or with any crop for which a tolerance exists for the active ingredient.

A 12-month plant-back interval must be observed for crops not listed on an imidacloprid label or for crops for which no tolerances for the active ingredient have been established.

IRRIGATION & DRENCH APPLICATIONS: ORNAMENTAL AND VEGETABLE PLANTS GROWN IN SMALL CONTAINERS			
PEST	CONTAINERIZED PLANTS (small containers)		
	Container size (inches)	Herbaceous species including vegetable plants (1 or 2 plants/pot)	Woody perennials, Herbaceous species including vegetable plants (3 or more/pot)
		# of Containers treated with 1 packet (20 grams)	
For control of: Adelgids Aphids Fungus gnats (larvae only) ¹ Japanese beetles (adults) Lacebugs Leaf Beetles (including Elm and Viburnum) Leafhoppers (including glassy-winged sharpshooter)	2	3000	2000
	3	2000	1350
	4	1500	1000
	5	1200	800
	6	1000	650
	7	850	550
	8	750	500
	9	675	450
	10	600	400
	11	550	350
	12	500	300
	Application methods		
Use sufficient volume to wet most of the potting medium without loss of liquid			

Leafminers Mealybugs Psyllids Root mealybugs ² Root weevil complex: (such as Apopka, Black vine, Citrus root weevils) ³ Soft scales Whiteflies White grub larvae (such as Japanese beetle, Masked chafers, European chafer, Oriental beetle, Asiatic garden beetle) For suppression of: Thrips ⁴	from the bottom of the container. Apply according to label directions. Follow application with moderate irrigation. Irrigate carefully during the next 10 days in order to prevent loss of active ingredient due to leaching.
	PLANTS IN FLATS, ON BENCHES, OR IN BEDS
	1 packet per 3000 ft ²
	Application methods
	Mix required amount in sufficient water to uniformly cover the area being treated. DO NOT use less than 2 gallons of mixture per 1,000 square feet. Apply as a broadcast treatment and incorporate into the medium before planting or apply after plants are established. Lightly water the treated areas if application is made to established plants. Allow no leaching or runoff for 10 days after application.
Remarks	
¹ Fungus gnat larvae in the soil will be controlled by drench or incorporation. No adult Fungus Gnat control. Other foliar insect control is achieved by the uptake of this product from a healthy root system translocating the active ingredient up into the plant. ² Root Mealybug control will require a thorough drenching of containerized media. Coverage is essential for control while minimizing the amount of leachate. Rate: 1 packet (20 grams) in 150 gallons of water. ³ Citrus Root Weevil: For use on non-bearing citrus nursery stock. ⁴ Thrips suppression on foliage only. Thrips in buds and flowers will not be suppressed.	
Restriction	
For use on vegetable plants intended for resale only including: Broccoli, Chinese Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Cabbage, Cauliflower, Collards, Eggplant, Ground Cherry, Kale, Kohlrabi, Lettuce, Mustard Greens, Pepinos, Peppers, Potatoes, Rape Greens, Sorghum, Sugarbeets, Tomatillo, and Tomato	

IRRIGATION & DRENCH APPLICATIONS: ORNAMENTAL AND VEGETABLE PLANTS GROWN IN LARGE CONTAINERS		
Application instructions: Use 1 packet (20 grams) of product in an appropriate amount of water to prevent leaching. One (1) packet will treat the number of containers specified below, based on container size.		
Pests	Container Size (gallons)	# of Containers treated with 1 packet (20 grams)
For control of: Adelgids Aphids Fungus gnats (larvae only) ¹ Japanese beetles (adults) Lacebugs Leaf Beetles (including Elm and Viburnum) Leafhoppers (including glassy-winged sharpshooter) Leafminers Mealybugs Psyllids Root mealybugs ² Root weevil complex:(such as Apopka, Black vine, Citrus root) ³ Soft scales Whiteflies White grub larvae (such as Japanese beetle, Masked chafers, European chafer, Oriental beetle, Asiatic garden beetle)	1	240 – 120
	2	120 – 60
	3	90 – 40
For suppression of:	5	65 – 30

Thrips ⁴		
Application methods		
Apply in sufficient water to wet the potting medium. Make applications prior to egg hatch of the target pest. Irrigate moderately after application to move the active ingredient into the root zone.		
Remarks		
<p>¹ Fungus gnat larvae in the soil will be controlled by drench or incorporation. No adult Fungus Gnat control. Other foliar insect control is achieved by the uptake of this product from a healthy root system translocating the active ingredient up into the plant.</p> <p>² Root Mealybug control will require a thorough drenching of containerized media. Coverage is essential for control while minimizing the amount of leachate. Rate: 1 packet (20 grams) in 150 gallons of water.</p> <p>³ Citrus Root Weevil: For use on non-bearing citrus nursery stock.</p> <p>⁴ Thrips suppression on foliage only. Thrips in buds and flowers will not be suppressed.</p>		
Restriction		
Use only on vegetable plants intended for resale only including: Broccoli, Chinese Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Cabbage, Cauliflower, Collards, Eggplant, Ground Cherry, Kale, Kohlrabi, Lettuce, Mustard Greens, Pepinos, Peppers, Potatoes, Rape Greens, Sorghum, Sugarbeets, Tomatillo, and Tomato		

FIELD AND FOREST NURSERIES		
Pests	Rate	
For control of: White grub larvae (such as Japanese beetle, Masked chafers, European chafer, Oriental beetle, Asiatic garden beetle)	1 packet (20 grams) per 1000 ft of row	1 packet (20 grams) per 3000 ft ²
Application methods		
Apply May through July. Time the treatment so that rainfall or irrigation occurs within 24 hours following the application. Apply as a uniform band on either side of the row using a band width six (6) inches wider than the actual root ball diameter to be dug. DO NOT allow bands in adjacent rows to overlap.		
Remarks		
Mowing of the vegetation in the area to be treated to a height of 3 inches or less prior to application will improve the consistency of control.		
Restrictions		
DO NOT use less than 2 gallons of spray volume per 1,000 ft ²		

EBB & FLOOD APPLICATIONS

This product may be applied through Ebb and Flood applications to Ornamental and Vegetable Plants (intended for resale only) grown in containers. To assure accurate uptake, prior to treatment, bring a minimum of 10 plants up to a known field capacity and allow to dry out for one or two days. Re-wet these plants to determine how much water on average each plant will absorb to bring it back at field capacity. Use the volume absorbed per plant (keeping pot sizes uniform) multiplied by the number of pots being treated. Add to this volume a required minimum to flood your smallest treatment area. This will minimize the return back to the storage tank. Re-use the returned volume with subsequent irrigation or nutrients on the same plants.

EBB & FLOOD APPLICATIONS: ORNAMENTAL AND VEGETABLE PLANTS GROWN IN SMALL CONTAINERS			
PEST	CONTAINERIZED PLANTS (small containers)		
	Container size (inches)	Herbaceous species including vegetable plants (1 or 2 plants/pot)	Woody perennials, Herbaceous species including vegetable plants (3 or more/pot)
		# of Containers treated with 1 packet (20 grams)	
For control of: Adelgids Aphids Fungus gnats (larvae only) ¹	2	3000	2000
	3	2000	1350
	4	1500	1000
	5	1200	800
	6	1000	650
	7	850	550

Japanese beetles (adults)	8	750	500
Lacebugs	9	675	450
Leaf Beetles	10	600	400
(including Elm and Viburnum)	11	550	350
Leafhoppers (including glassy-winged sharpshooter)	12	500	300
Leafminers	Application methods		
Mealybugs	<p>To minimize the return back to the storage tank, keeping pot sizes uniform use the volume absorbed per plant (see test above) multiplied by the number of pots being treated. Add to this volume a required minimum to flood your smallest treatment area.</p> <p>Re-use the returned volume with subsequent irrigation or nutrients on the same plants.</p>		
Psyllids			
Root mealybugs ²			
Root weevil complex: (such as Apopka, Black vine, Citrus root weevils) ³			
Soft scales			
Whiteflies			
White grub larvae (such as Japanese beetle, Masked chafer, European chafer, Oriental beetle, Asiatic garden beetle)			
For suppression of:			
Armored scales			
Thrips ⁴			
Remarks			
<p>¹ Fungus gnat larvae in the soil will be controlled by drench or incorporation. No adult Fungus Gnat control. Other foliar insect control is achieved by the uptake of this product from a healthy root system translocating the active ingredient up into the plant.</p> <p>² Root Mealybug control will require a thorough drenching of containerized media. Coverage is essential for control while minimizing the amount of leachate. Rate: 1 packet (20 grams) in 150 gallons of water.</p> <p>³ Citrus Root Weevil: For use on non-bearing citrus nursery stock.</p> <p>⁴ Thrips suppression on foliage only. Thrips in buds and flowers will not be suppressed.</p>			
Restriction			
Use only on vegetable plants intended for resale only including: Broccoli, Chinese Broccoli, Broccoli Raab, Brussels Sprouts, Cabbage, Chinese Cabbage, Cauliflower, Collards, Eggplant, Ground Cherry, Kale, Kohlrabi, Lettuce, Mustard Greens, Pepinos, Peppers, Potatoes, Rape Greens, Sorghum, Sugarbeets, Tomatillo, and Tomato			

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

PESTICIDE STORAGE: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Nonrefillable container. **DO NOT** reuse or refill this container.

Cardboard Outer Packaging: Outer packaging for this product is secondary packaging to contain Water Soluble Packets. Thoroughly rinse any soluble powder residue from container into application equipment; then offer for recycling if available or dispose of in a sanitary landfill.

Foil Lined Packaging: Outer packaging for this product is secondary packaging to contain Water Soluble Packets. Thoroughly rinse any soluble powder residue from container into application equipment; then offer for recycling if available or dispose of in a sanitary landfill.

Water Soluble Packets: After adding water soluble packets to the spray tank, allow sufficient time for bags to dissolve before spraying. There is no container disposal once the bag has been dissolved in the spray tank.

WARRANTY DISCLAIMER

The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE. UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

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If you do not agree with or do not accept any of directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.

(RV)

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[Individual Water Soluble Packets Label:]

Mantra 60 WSP

ACTIVE INGREDIENT:

Imidacloprid: 1[(6Chloro3pyridinyl)methyl]
Nitro2imidazolidinimine. 60.0%

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

See Accompanying Booklet for Directions
For Use, First Aid, and Precautionary
Statements.

EPA Reg. No. 228-681
Net Weight: 20 grams

[Nufarm: Grow a better tomorrow]

[Grow a better tomorrow]